# THE NATIONAL COLLEGIATE TRACK COACHES ASSOCIATION

Proceedings

of the

Eleventh Annual Meeting

: : :

Thursday, June 17, 1937

: : :

University of California

Berkeley

Published at

Michigan State College

# C O N T E N T S


| Page | | |
|---|---|---|
| 1 | Sprinting | L. N. Snyder |
| 16 | Pole Vault | W. H. Hayward |
| 22 | Discussion on the Effects of Smoking | |
| 26 | The Shot Put | Fred Tootell |


## 1937-38 OFFICERS

F. P. Johnson, Drake University ---------- President

Fred Tootell, Rhode Island State University ------- Vice President

Brutus Hamilton, University of California -------- Secretary-Treasurer


Mimeographed by
MIMEOGRAPH DEPARTMENT
MICHIGAN STATE COLLEGE
East Lansing
1938

THURSDAY MORNING SESSION

June 17, 1937

The opening session of the National Collegiate Track Coaches Association Clinic, held at Stephens Union Building, University of California, Berkeley, California, June 17, 1937, convened at 9:30 a.m., President F. P. Johnson presiding.

PRESIDENT JOHNSON: I know you gentlemen are here to listen to the words of wisdom that are going to come from other members of our Association, so I shall not waste much time on a long introduction to our program. May I, however, welcome you all to this annual meeting, and express the hope that your attendance here will be worth your while, and that your stay here at Berkeley, the scene of our 1938 meet, will be a pleasant one. We welcome also those few of you who, while interested in the work of the N.C.T.C.A., hold no membership in our organization. You are invited to participate in the discussions and to make contributions to our program if you see fit.

Our business meeting (a closed session) which will be a part of this afternoon's program should be well attended if you wish to express your opinions on the policies that this organization is going to follow, especially with regard to our entering into an affiliation with an eastern group, a matter which we have been talking about for some two years, I believe. We hope to reach some final agreement with them, and make this affiliation or union.

I will leave any other remarks until the time we have our business meeting this afternoon and get now to the business of the discussion of events.

In the sessions this week, we hope to cover the pole vault, shot put, sprints, hold a discussion on the promotion of track or an effort in the direction of creating more interest in track and field, and, if we have time, conduct a discussion of the rules and other pertinent subjects that anyone might want to present. We do especially want to cover the three particular events that we have not talked about for two or three years.

Mr. L. W. Snyder (who probably is the best known coach of colored boys in the United States) has agreed to lead the discussion on sprinting. I need not say that he speaks with a good deal of authority, and, without any further preliminaries, I will have Mr. Lawrence Snyder of Ohio State University take charge of this discussion.

MR. SNYDER: Thank you, Mr. Johnson.

## SPRINTING

Gentlemen, I am not going to talk very much. You fellows are going to do the talking whether you know it or not. I did jot down some notes here -- things that I think we ought to talk about.

I personally feel that we do not need to talk very much about the sprinters themselves but that we do need to talk about how to get these sprinters away from their marks in the fastest possible way.

As college coaches, we differ a lot from the high school coaches in that we get our sprinters as such -- the high school coach gets a lot of runners or gets a lot of boys out for track and it is his job to classify them. When we get our boys we know for the most part which ones are the sprinters. We might want to pull some quarter-milers down and try to make sprinters out of them, but we know pretty definitely who the boys are who are going to be our sprinters for

the next three years. Then it is up to us to make them better sprinters or to find out just as soon as possible whether they are college-caliber sprinters, and if they are not, to move them to some other event. That event will be any event the coach wants to take a chance on.

The boys who we do keep in the sprints, we have to get in shape ready to teach the start, and personally I don't let a boy go the starting mark before he has been on the track for a month. I do not know whether you agree with this or not, but I make these kids run and try to teach them the form that I want them to run in that month of preparatory training in which I am getting them ready to stand the pressure that they are going to be forced to put on their legs and arms and their bodies when the gun cracks. During this training period, as you have your man taking lap after lap and striding up and down the straight-away, that is the period when you can teach them the kind of arm action you want them to use and that is up to us.

I personally want them to have their arms in close to their bodies, swinging freely through so they can feel the arm -- the inside of the upper arm -- rub past the body, never letting the hands get across this median line as they swing through, letting the elbow lead hard back and up so that when the arm is fully back, the hand is hanging under the elbow -- and to have no tension at all in that arm action, holding those shoulders squarely ahead while they are doing all this.

We get a lot of sprinters who have been told to get their knees high in high school. That may have been the only instruction ever given them, to run with their knees high. In running with their knees high, they have reared back so that you see them coming down the straight-away in an erect position, their shoulders back much further than you want them -- much further than I want them. I want that boy inclined forward, leaning in there as he leaves his back foot, so he has a straight line from the back of his head down to his heel. I do not want him bent over from the waist. I do not want him reared back so he is perpendicular to the track. I want him to get his feet down on the track just as lightly as he can put them -- not punishing the track, but kissing the track as he goes along, putting those feet down on the track as lightly as he can. Those are the things that we are working on during that first month -- getting the boy built up then, so he will stand the pressure when the gun cracks.

I am just about finished talking except to start discussions about various things at the starting line. I want to get these in the order they come so that we can proceed properly with them, and get the man away from his mark in the way that you want him to get away.

The position, then, of the front foot at the starting mark: how far do you want the man's front foot to be behind the starting line? A lot of the older coaches books -- coaching books on track -- say 18 inches. I personally want the boy's front foot up within eight or ten inches of the starting line. I think this is a good time to get some discussion on this.

Chuck Hoyt at Michigan had a lot of training under Steve Farrell and has done a lot of coaching on his own hook since then. He has had great sprinters: Dehart Hubbard, Willis Ward, Tommy Stoller, and probably a dozen others that Chuck can name and probably will name for you. I wish Chuck would talk a bit about this -- the placement of the feet at the starting line, how far you want the front foot from the starting line, whether it depends on the build of the boy -- how you instruct a man when you get him there at the starting line, in the placement of his feet. You might at the same time take up the position of the back foot, where the knee is to come with relation to the front foot and that sort of thing.

MR. HOYT: I did not know I was to be called to say anything here. I do not know if I have anything that will be of value to this group or not. Larry wants me to say something about the position of the front foot. I think that depends a great deal upon the individual. We do not have a rule as to how far back or how close it should be to the line. We do have a general rule that we work from and we just pass this out to all the boys who come out to run. We pick out the fellows who we want to emphasize starting and I have found that this works pretty well with the group.

We usually have the back of the front block or hole the length of a man's foot from the starting line. We have found that fits nearly all boys. Now some of these boys may move that up, some may move it back. I do not feel that you want a man too close. I will tell you the one thing we keep working for an we probably change this a dozen times before we find what we want. We try to get the man in as comfortable a position as we can. That is the one thing we work for, so he feels like he is in a position where he can get some action.

Now I feel if a boy is too close to the line, he cannot get any action. We want this fellow so he is in a position to drive off of that front leg with all the power that he can get. Now that is not very definite but it is what we work for.

As to the position of the back foot that is the same. You will see some sprinters who will place the back foot no more than six or eight inches behind the front -- that is the hole. The back hole is about eight inches behind the front hole. I do not like that so well.

Now, when we first put a man on the marks, we usually tell him to get down so the rear knee is somewhere between the ball and toe of the front foot. Once in a while we put him on the mark so that his knee is further forward than the toe of the front foot. That depends on the boy. I find that these rangy fellows are much more comfortable when they go to the marks if the knee of this back leg is just about even with the ball of the front foot. That is what we are after -- comfort.

Now the shorter fellow; you might bring him up a little closer. I cannot say that is right but it is what we work on and we have had fairly good success.

The other thing I think is quite important is the location of the back hole. How close should that be when you line up those holes? Should it be in close or wide or straight back? Now we determine this by the width of the man's hips. When we put that fellow on the mark, I like to have this knee go down so it is absolutely in line with the boy's hips. If it is a big wide hip, naturally he is going to have quite a spread when he goes to the marks. He may have four or five inches between the knee of the back leg and the front foot. The little fellow -- we will pull him in. But if it is so that this fellow has got the leg down in a position so it will come straight through, that is the thing we work for.

Now, I watch a lot of these boys. I like to go down and watch all these different fellows start. I see so many boys get on the marks. When they get on the marks, you sometimes will see this back foot almost in behind the front foot. I do not believe the boy gets the value out of his start when he is in such a position, and it is my feeling that if he has the back hole or block so that the leg is straight down from the hip, he is going to work right.

Now, that is about all I have to offer there. I would like to know about the experiments Iowa has used to determine the distance apart the feet should be on the starting mark.

MR. SNYDER: Yes, Chuck. Thank you very much for your contribution. George, will you answer that question?

MR. BRESNAHAN: We first arbitrarily describe the three methods of foot spacing, and we simply term one the "bunch," the other the "medium" and the third the "elongated."

We have found individuals who would fit into these classes so far as height was concerned. Then with each individual, he was asked first to take his normal start --- the one that seemed most natural to him, and readings were taken on his reaction time, or time of getting off the marks. We have not claimed to have solved the problem at all; it simply was a study, and has been published and is available gratis to any of those who have not received it. I do not know if that answers the question or not.

MR. HOYT: I thought your experiments proved, so far as they have gone, that the closer the feet were together, up to perhaps six or eight inches, the quicker reaction was; the get-away was quicker. Is that true?

MR. BRESNAHAN: We found that what we determined as the "bunch" start, sometimes called the bullet start or the "Drew" start, in which the front foot is about 16 inches from the starting line and the back foot about 26 inches from the starting line, yielded significantly faster starting time with tested individuals.

MR. SNYDER: Thank you, George. From personal experience when I was starting in track, I felt that the closer I could be to the starting line in a comfortable position, the better shape I was in as compared to the boy who had the front foot say 18 inches or 20 inches from the starting line. The comparison to me was: that the man who had his front foot 20 inches from the starting line was behind me at the start. If I was only 8 inches, I felt that I could get almost a foot lead on the man before the gun cracked, by getting a good start close to the mark, and I could start just as fast from that position as I learned to do it.

Jesse Owens (Ohio State ex-'37) could start just as fast and a little bit faster from that position. Jack Keller (Ohio State-'32) who was an entirely different type --- 6 feet 3½, was able to learn that start and became a good starter close to the line.

That is just an advantage of anywhere from eight inches to a foot over the man who starts with his front foot well back from the starting line. I don't expect you to agree with me. I am going to go on coaching that method just the same because I am convinced it is good.

MR. SEATON: Larry, you do not make any distinction between holes and starting blocks. Now I find that starting blocks --- you have to put four inches, at least or further back, maybe six inches, than you do holes.

MR. SNYDER: That is true.

MR. SEATON: I think all you men when you are talking should say whether you are using starting blocks, or holes.

MR. SNYDER: How many are agreed when the boy is using starting blocks, he must put them back three or four inches further than he must digging his hole? Are most of you agreed on that?

VOICES: Yes.

MR. SNYDER: If you do not agree, we would like to hear from you. That has been our experience in the use of blocks. He has to set them back further than he would normally dig holes for the same start.

Well, that covers pretty well the digging of the holes in this close-up position that we use. It brings the knee beyond the starting line, off on time. The front of the knee of the back leg is directly above the starting line or a little bit ahead of it, giving sharp angles to the legs for driving.

The next points that we should take up, I think, are the various

positions of the body -- the back and the buttocks. Do we want the buttocks higher than the shoulders? Do we want the back flat so the buttocks and shoulders are on the same line, making the back horizontal or do we want the buttocks low and the shoulders high?

I have not paid a great deal of attention to Bobby Grieve's (Illinois - '37) starting this year until yesterday out at the track. I saw him with his buttocks very much higher than his shoulders. I think Don Seaton might very well tell us the reason for that.

MR. SEATON: The only reason I know is because I would like to have him start with it lower. That is about the only reason I can give, but I think that he has felt all along, that by getting closer to the line, getting his feet closer together, that he has to raise his buttocks to pull out.

Now, I have always felt when I stand across the field, as I usually do to watch a starter, that they do start faster with their buttocks high, but after they get out about three steps, they start losing space out there, and I have almost found that to be true with every starter. I wish some of you would try to convince Grieve of that.

MR. SNYDER: I am glad to hear that. I personally could not feel it was good, in watching him doing it, and just wondered what the explanation was. I know an old coach who used to coach that all the time -- very high in the rear and probably having a tendency to drive the man down and raise later on. To me that position is wrong. If that back leg is straight, it has to be bent before it is pulled through. There is an action that has to take place that is not necessary to have there at all.

Frank Hill back there, has not said a word, which is very unusual. I would like to hear him talk a little bit about the horizontal position, whether you believe that is the best position or whether you like one of the other positions better and maybe bring in the distribution of weight, Frank -- how you like that weight distributed on the hands and feet? Will you do that?

MR. HILL: I do not think that I am qualified to talk about sprinters. If it was distribution of weight in a rocking chair, I am pretty sure I could tell you about it.

I have always felt that the start is an opportunity to gain momentum and carry on through. I believe when the buttocks are higher, that there is a tendency to get that jump start that Don speaks of and to lose momentum and stop and have to start running from the up-right position. I think the buttocks should at least be not higher than the shoulders, and if possible, just slightly lower. That allows a man to get his plunge forward. I like to tell a sprinter that the start is a plunge, not a case of lifting up and starting to run, but plunging out and having to fight with his arms to hold himself off the track, feel that he has to work his arms hard and drive with his knees high in order to keep himself from just sliding along on his nose. When the start is a plunge of that type and he comes up into a run, he has got the maximum out of the momentum he could get there from the push off of his foot.

The distribution of the weight should be slightly forward, of course. That is about all I can say. That about covers my opinion on weight -- the distribution of weight at the start. I do feel definitely there is something in the arm action, that the arm, that elbow, regardless of the arm -- the elbow should come back with a smash, with a very definite jerk, so that the runner will be aided in bringing out his rear leg.

MR. SNYDER: About the arms, their relation to the track, Frank, should those arms be vertical or would the shoulders be ahead of the hands or in back of the hands?

MR. HILL: The weight at the time of coming to the set position -- I believe the hands should be just far enough apart to allow the hips to pass through without touching -- the hips should come between the arms.

MR. SNYDER: Swung just straight down from the shoulders?

MR. HILL: Yes, and the weight should be almost completely upon the hands. The lead-off foot, most of the weight should be forward on it -- held on the arms, and the arms should be straight down, not out to the side or not forward. They should form two pillars that are holding the weight of the body as much as possible.

MR. SNYDER: They would be perpendicular to the track?

MR. HILL: Yes.

MR. SNYDER: Can you have them perpendicular to the track and get as much weight on them as you say?

MR. HILL: I can say they are going to have more than that. The front foot and the pushing foot do take some of the weight. They have to, in order that the push be from them, but I like to tell a runner to get as much weight as possible on his arms, to bring his weight forward and directly protect it with his arms, so that when his arms leave the track, he would fall flat on his face if he did not move forward.

MR. SNYDER: Thank you, Frank.

Who else would like to talk about that? I think that is important in teaching. If you are going to tell a boy how much weight to put, where and what are you going to tell him?

I would like to know if there is any agreement upon that here, whether some of you believe that the arms do not carry very much weight? Some of you, like Frank, believe that they carry practically all the weight. Some of you possibly feel that the weight should be just about evenly distributed between the two feet and the arms.

MR. SCHLADEMAN: I believe that practically everything has been said. I would try to say the same thing that Chuck Hoyt did and try to get a position where you can get maximum action, and I have also said to the boys that the matter of getting a lead in the first two or three yards is not half so important as holding coordination straight through the race. I believe if they get off to a jerky start, they are going to lose coordination, and the field is going to go by them. Try to get them in as comfortable a position as they can have, also get the drive off both feet. Nobody said anything about a drive off the back foot. I do not believe you can drive off the front foot exclusively. I think it must come off both feet.

MR. SNYDER: Carl Olson mentioned to me before the meeting, he would like to hear the "drive" discussed. You talk on it and we will get somebody else to discuss it also.

MR. SCHLADEMAN: I feel that the weight should be mostly on the hands and the front foot with just enough pressure on the back foot so the boy will not feel wobbly. I instruct my sprinters to drive off both feet and to run, not to jump, which I suppose is -- if they drive off both feet and run, they will get what Frank Hill calls a "plunge." I have found in my experience, that you cannot lay down any definite rule of distances back for the feet, although I have favored what George Bresnahan called the "bunch" start.

I like the front foot up closer than you men from the Middle West. That is probably because I emphasize the drive off both feet rather than primarily off the front foot. One rule which I think we all have, is that the back must be straight. It cannot be humped in any way, shape, or form. Otherwise he will not get out of there properly. Aside from the fact that I thought you left emphasis

off the back foot, I would agree to pretty nearly everything that has been said.

MR. HILL: May I rise in rebuttal to the gentleman from Washington State? Brother Bresnahan of Iowa, in collaboration with Dr. Tuttle, also of Iowa, conducted some experiments about the foot-poundage of pressure by a sprinter starting.

They find that when a man is driving, as he thinks with all his push from his front foot, that the push from the back foot in poundage -- foot-pounds, as actually measured by a device for that purpose, is greater than the push with the front foot. So if you concentrate on pushing with the back foot, probably you are throwing too much pressure on that rear foot. Isn't that about true?

MR. BRESNAHAN: That is substantially so.

As the back foot is moved further back, the greater is the amount of pressure by that foot. As the feet are closer together, the front foot exerts the greater pressure. At a spot midway between, the force is about equally divided and while our machine did not exactly register in foot-pounds, it registered what we called approximately 195 pounds for the front foot. The back foot registered about 150 pounds pressure when they were in the close position and as high as 205 when they were spread far apart.

MR. SCHLADEMAN: I am interested in the method. What are we going to say to the boy? I am asking what is the method of instruction. If we tell the boy to put the emphasis on the front foot and use this "bunch" start, then we get the result from the back foot that I have been trying to get at.

Maybe I have been starting the thing wrong. I find that is the chief trouble. They do not understand it.

MR. SNYDER: To me, not having gone into the technical side of it, the action of the back foot is just reaction to the gun. You do not need to think anything about it. When the gun cracks -- well, we will talk about it later; what we are focusing on. Regardless of what you are getting at, the back foot is going to give a jam against that block or hole in order to help that leg forward. The idea to me, is to get the back leg forward and the back foot on the track just as quickly as possible. I do not think you need to say a word to the boy about it. I think he is going to try to get it out there. The less you say to him about it, the better.

George, you made tests on that and have taught it so you put emphasis on what the back leg does. Do you tell the boy to consequently do things with his back leg?

MR. BRESNAHAN: From the teaching standpoint, we first of all get settled on the spacing of the feet. Our experience is rather parallel to that of Schlademan and of Chuck Hoyt. We ask the athlete to find a position that is rather comfortable and from which he is able to exert an efficient drive.

MR. JONES: What machine or what instrument, George, did you use in measuring? I have made tests that way with the dynamometer, just the hand dynamometer, by slipping them in the wooden blocks, placing the blocks for the feet.

Now, I have found that the registration of the rear foot was greater than the front foot, but I do not believe that. I think that three-fourths of the work is done by the front foot -- of moving the body forward. Still, on an instrument like that, you get a higher registration, because the initial kick is greater while the front -- the action of the front leg -- is coming through and taking a longer time. A continued drive with the front foot.

MR. BRESNAHAN: You drive twice as long normally, with the front foot, as you do with the back.

MR. SNYDER: Is that actually so in tests? I would have said ten times.

MR. HILL: Steady pressure with one and a kick with the other.

MR. BRESNAHAN: Mr. Jones is correct there when he states that it registers only the maximum force put on, and when measured by means of the smoke tape, the time the pressure was put on both the back foot and the front foot, and as near as I can tell, the front foot applies pressure approximately twice as long as the back foot.

MR. SNYDER: Thank you very much, gentlemen. Unless someone else wants to talk on this, I think we have covered it pretty well. It is up to you from here on, to take the good out of it and use what you like there.

The next thing that I would like to hear about is what to tell the sprinter when the starter says, "Get Set." What are you going to say to your man? Do you want him to be tense when he is in a set position? Do you want him to be semi-relaxed, or do you want him to be relaxed?

Since I am up here, I will give you my opinion. You can tear it apart. I want him to be semi-relaxed. I do not want anybody there in a tense position. The instant that man becomes tense at the start -- that is, when the gun cracked -- his feet are going to pull out wide, he is going to wobble, he is going to tie up somewhere before the finish line comes. I like them in there in a nice easy position, waiting for the gun, whether it is two or three or four seconds -- he is in there waiting for it and ready to drive when the crack of the gun comes.

Are you wanting to discuss this, or is that something that we all agree on? Chuck, do you have anything to say to your men on that?

MR. HOYT: I agree with what you say on that.

MR. SNYDER: That we do want them in a semi-relaxed position.

MR. JONES: There is one point before you come to that, which I think is very helpful in starting. That is: the starter should allow enough time, that a sprinter be instructed to inhale and breathe while on the mark. They will be coming up less tense, if they are allowed to do that.

MR. SNYDER: I do not know how we are going to get it around to the high schools. The starters who start the high school meets are the boys to say "Go to your marks! Get Set! Bang!" Nobody has time for anything. I have been to meets where they shot the gun and then said "Get Set!"

There is not much time to breathe in a case like that. I think in our bigger college meets, starters are giving the men plenty of time. He is allowing as much as three to five seconds until the men are set and then waiting until -- at least two seconds, and when everybody is out of motion, pulling the gun.

MR. STEGEMAN: Wasn't it Dink Templeton who gave the description "Emotionally tense and physically relaxed?" That was two or three years ago.

MR. SNYDER: Another point about the boy at the starting marks. Where do you want his focus of attention? What do you tell your boy to think about when he goes to the marks?

MR. HAYWARD: One of the best things that I have heard about on the marks happened to a quarter miler. He said, "What will I do?" "Go when the gun goes and get back here as soon as you can." Now on the marks, I like to have the boy relaxed physically, semi-mentally, with his eyes focused down the track about fifteen or probably twenty feet, depending on the length of the boy's arms on the track, looking out from under his eyebrows. Naturally when he leaves his mark, why his eyes come to the tape. The only thing I tell them to do, is to not look sideways but go right ahead and keep relaxed and hit the last thirty yards as hard as they can.

One thing I would like to have you discuss here, among the coaches, is the method of breathing. From the blocks, going the 100 in one breath? I don't know whether I would be in favor of that, because you take running a hundred yards

on one breath, unless you are a barrel-chested boy, why you are fighting for more breath instead of running the hundred yards. I think it has a tendency to tie up a little bit.

I would like to hear some discussion on that. A lot of high school coaches ask me about that. The answer I give is "Put your boy on the mark in the position; let their breathing come natural."

MR. SNYDER: I wonder if you would mind -- we have the boy on his marks now -- if we can keep him there and then go into the race itself? I agree with what you said. There are probably others who do not.

MR. STEGEMAN: You were asking what you wanted a boy to think of. A woman asked a doctor one time, when she was starting off on a voyage, "Doctor, tell me something to do when I get awful sea-sick." He said, "Don't worry, you will find something to do."

MR. SIMPSON: Here is one thing I try to think works with some of my boys. Some of the boys -- I tell them not to think about this "when the gun is cracked, now I have to run, see" but to concentrate on "I leave as the gun cracks" and not "the gun in cracked and then I go."

MR. SNYDER: In other words, he is focusing on the gun?

MR. SIMPSON: Not on the gun exactly. When that gun -- when the sound is that "I am leaving" and not that "the gun is cracked and now I should go." If you can get the distinction in there. I do not know -- I guess it is pretty fine.

MR. RIDER: I was corrected in a class one time and I think I learned a lesson in instruction. I said, "I want you to concentrate on the gun and go," and the boy made the remark, "Don't you mean concentrate on going with the gun?" I find in my teaching that it helps a whole lot. I tell a boy now to get down there in this relaxed position that we are talking about, and concentrate on going when the gun fires.

MR. SNYDER: Well, you feel the same as Bob does.

MR. RIDER: Yes, and that distinction of going with the gun instead of after the gun, helps.

MR. SCHLADEMAN: Why not say concentrate on your move? You will hear the gun anyway.

MR. SNYDER: Well, I think that the boy, in order to be able to start when the gun cracks, and only when the gun cracks, has to concentrate on the gun.

If a boy will concentrate on the gun -- if that is the only thing that will start him -- he is not going to be bothered by these fellows pulling out on his left or over here on his right. He is in his spot, mind focused on the gun. That is the only thing in the world that is going to release his energy. If he focuses on that, he cannot think about form, I do not think. That is why he practices all the year. If he is going to think about form when he gets in a national collegiate race, then we have wasted a lot of time.

MR. STAGG: Has it not been psychologically proven that some people react quicker by thinking of the gun, and others will act quicker by thinking of the foot that does the pushing? Has not that been proven? I was talking with a psychologist and he told me that the reaction is quicker sometimes with some people, by thinking of, say, the gun, and sometimes by thinking of the particular part of the body to move.

MR. SNYDER: It is up to us then to find out from the individual boy what is the proper thing for him to think about in that case.

MR. STAGG: Well, now, in some cases it would be to think of the foot -- the push, and in others, to think of movement with the gun. That is the way I interpreted it.

MR. SNYDER: Thank you, Mr. Stagg. Chuck Hoyt has been grinning here, at some of the things I have been saying. Get up on your feet, Chuck, and speak up.

MR. HOYT: Well, I think there has been a lot of good stuff said here. There are a couple of things I think are important in regard to concentration in starting. The first thing: that a starter should have in mind, when he sends the boys to their marks, the physical condition. A boy likes to have some time to prepare himself in his holes. He likes his feet fixed. He likes to fix his hands. The first time he feels his hands on the ground, he likes some cinders on his hands or something. He likes a little bit of time there to get himself ready physically.

The next thing: a boy has to have some time to collect himself mentally. I believe that a boy, if he collects himself mentally, experiences a process of concentration which gives him a chance to figure on what he is going to do.

I teach our kids: "That you are going to be lost to the world when you get that command 'get set' and you do not know what else is going to happen. There is just one thing that you are concentrating on there — on the race." I thoroughly agree with what Mr. Stagg says here. I have heard the point discussed before and we work a lot on the concentration of the gun, but I believe that if a boy concentrates there, and he is all set mentally with a constant drill that he has practiced for days, he will develop to be a good starter and he will not allow these fellows who jump from one side to the other to pull him off. That is my personal reaction on the starting. I think these kids who are not good starters get down and they get set and their mind wanders. They think about Bill Jones over here or the other fellow on the other side.

MR. RIDER: I think there is one thing. That is for a man to hold his breath — a moderate breath — while he is listening for that gun. If you are in a room and you want to hear something, what do you do? You hold your breath in order that you may listen intently. And so, when a fellow is in a set position, if he will just take his normal breath and hold it until the gun cracks he will assist himself in concentrating, I think, on going with that gun.

MR. SNYDER: That is a very good point. Now what about the length of time that should elapse between the time a man gets set and the moment the gun is fired? It has been reported that the optimum is one and one-half seconds but in the National Collegiate rules they call for three seconds.

MR. BRESNAHAN: May I interrupt? From the time a man's hips become steady until the gun is fired the interval should be two seconds. From the time the command "get set" is given, until the gun, the interval is about three seconds. The two harmonize very closely.

MR. SNYDER: Well, we have had this man up here in a set position for a long time and we have focused him on this and that. He is still there — the gun has not cracked. To me, when the gun does crack, the man is going to do what we have taught him to do. If we have taught him to upper cut with his left arm as his right leg comes out, that is what he is going to do. The right arm is going to come back here with the elbow leading just as hard. I think we are all agreed he would not bring it away back the way Charlie Paddock did. I doubt if there is any disagreement there at all.

I think there is a disagreement. I know a lot of the older coaching books said that the man wants to start with choppy strides so that he can get under way in fine style — something that I disagree with entirely.

I want the man to go out there reaching — not over-reaching — a normal reaching stride. I want each stride to be a little bit longer than the one before it and I want him low as long as — not as long as he can stay low — but for five or six of these strides. I want him to gradually be coming up.

I saw Metcalf work for a week at Princeton last year, starting with Jesse Owens and Sammy Stoller. At the end of the first twenty yards, Stoller and Owens are out anywhere from three to seven feet ahead of Metcalf. Would that be right -- in about twenty yards?

MR. OLSON: About that.

MR. SNYDER: Varying a little bit but never less than three feet ahead of him at that distance. Metcalf was taking the choppy strides. The other two boys were going out and reaching and using those arms and gradually coming up in running position.

Now what do you want to teach your men? I am not going to change what I have been teaching. Some of you may be convinced that the short choppy strides are the thing -- that you have found men who can get under way quicker. If you have, we would like to hear about them. (No response) Well, apparently, then we are in agreement on the fact that the man must go out there normally -- not intentionally chopping his stride but getting into position and running.

We have got this man running at last -- we hope in good form -- and probably now could take up the point here about the breathing. I feel that normal breathing is -- breathe when they want to breathe and not intentionally hold their breath. I know that there is a great disagreement on that topic. Some of you men may believe in the holding of breath for definite periods.

George Simpson's coach wrote an article about his holding his breath or taking another at 70 yards -- filling up his lungs at 70 and going on through to the finish. George took a breath whenever he needed it. He breathed four or five times during a hundred. It was a theory that coach had. Ideas of that nature get out. High school coaches get them. High school boys get them and think they are gospel because they came from some authority on it.

Does anybody want to talk on the breathing during the hundred?

MR. SEATON: I always say "Forget it." When a kid asks me about breathing, I just say "Forget it" and walk away.

MR. SNYDER: Mr. Hayes, you have a lot of breathers over at your school. How about it?

MR. HAYES: Just as naturally as they possibly can.

MR. STAGG: Mr. Chairman, I wonder if any coach here asks his sprinters to take several -- fill his chest several times with a full breath before he starts?

I remember back in 1890 seeing a champion Harvard sprinter -- and he was a champion. Every single time that he got ready for a race, he would inhale and fill his chest and do it several times and then he would get down on his mark. Well, nobody knew anything about it except that he was the champion and he won right along, whether it was of great value or not. Apparently it has gone out of use.

MR. SNYDER: No, it has not.

MR. HAYES: I think that is still holding.

VOICES: Yes.

MR. SNYDER: I never start a time trial of any kind without forcing the boys to stand there for a minute and take good deep breaths and exhale. That is physiologically correct, I am sure, because if you can pile up oxygen in the lungs and in the blood, you can hold your breath for four or five minutes. After very deep breathing, you can hold your breath for three and a half or four minutes without any effort. I feel it is good for the runners to pile that oxygen up. I learned that from the Illinois boys when I was in college, standing there and breathing and shaking their arms loose and their legs loose, just standing there and getting everything free before they went to the marks. Harry

Gill probably thought of that a long time ago.

MR. STAGG: I want to make one more remark, not on the sprinting but to give you my experience.

I am in my 74th year -- soon will be 75th. I went over and played tennis at a place that was seven-tenths of a mile away and then ran back. Well, I found that I could run the distance better after I played a while than if I attempted to run over. That simply is in the line of what Cunningham and other good runners have done, to get a thorough warm-up.

MR. SNYDER: Thank you very much, Mr. Stagg.

Pitch, I don't know if we have time to go into warm-up for the sprints. We have probably taken up a lot more time than we should.

MR. JOHNSON: It probably will not take much time, about five minutes.

MR. OLSON: About that breathing you are talking about -- taking that long breath thirty yards before you finish. That may not be worth a whole lot but for a boy who is going along and not making the progress that he thinks he should, that can be used psychologically. He feels that as he takes that long breath, say thirty yards from the finish, he gets his arms to working faster. He sometimes thinks he is improving himself. If you can get a boy to thinking that he is getting better, I think sometimes you can use some of those small tricks to increase his speed.

MR. SNYDER: That is right. Psychological breathing then, could be used undoubtedly. I never thought of it in that way. We are prone to laugh, I think, at a lot of things that somebody else thought of and think they are immaterial, when they can be used in some different manner as Carl suggested.

Then, are we ready to go to the question of the warm-up? No doubt, if it is important, we should talk about it. We all know the value of a warm-up, that your man has to be out on the track. Let us go around and find out the periods that you men want your men on your track prior to the race. Say a man is going to run a hundred yard dash at two o'clock. What time do you want him to be dressed ready to warm him up? Two o'clock is the time of the race.

MR. SIMPSON: I will tell him an hour ahead of time, and dressed.

MR. SNYDER: To start at the warm-up?

MR. SIMPSON: At least 45 minutes for a sprinter.

A VOICE: Thirty minutes. MR. SEATON: The same. MR. JONES: Half an hour. VOICES: Thirty minutes. Thirty minutes. Thirty minutes. Forty minutes. Forty minutes. MR. STAGG: About half an hour. VOICES: Thirty minutes. Forty minutes.

MR. SNYDER: John Griffith back there, an old track coach, how about you? How much time do you give your men to warm up?

MR. GRIFFITH: About half an hour.

MR. SNYDER: Well then, we run from thirty to forty minutes.

MR. TOOTELL: I have one kid who warms up for an hour and a half.

MR. SNYDER: On account of a pull?

MR. TOOTELL: He had a little leg trouble. If he does not warm up that long, he will pull a leg.

MR. SNYDER: I think that would necessarily enter in. We are thinking of normal runners now.

MR. HILL: Temperature and temperament both enter into that.

MR. SNYDER: I do not believe they do. They do not with me.

MR. HILL: A nervous boy will go out and work his head off if you do not watch out.

MR. SNYDER: This is my feeling on the thing -- since I am up here. A boy must get out there somewhere around 45 minutes ahead of time, that he must

start his work-out very gradually, building up. Or do it this way: run one lap, striding one lap when he first goes out, just enough to start a little bit of perspiration, then go through his calisthenics, five or ten or twelve minutes, whatever he normally goes through or takes in practice. Then start with his gradually striding up and down the track, building it up faster and faster with about twenty minutes to go. He then goes into the training room, get a light rub-down, stays in there until six or seven minutes before his race, comes out on the track, strides a little more and then goes to the starting mark. That is the way we try to do. You do not always get it across to the boy. Sometimes a boy will slip a little bit on it.

MR. STEGEMAN: Is there any physical differentiation between a colored boy and a white boy?

MR. SNYDER: From my experience, there is no difference at all, no. The ones that we have had just go out there and perform the way the white boys do. They all warm up in the same way.

MR. STEGEMAN: They say they have much looser muscles, that they do not need much warming up -- that they warm up easier. You hear those things.

MR. SNYDER: If it were true -- I have never made the test and I would not take the chance on hurting anybody. They go out at the same time. Owens always warmed up just as hard as any of the other boys.

MR. STEGEMAN: Did you ever detect any emotional difference, that they "key up" more easily?

MR. SNYDER: The only thing that would key Jesse up was the actual competition. If he ran in a dual meet against a boy that he knew he could lick very easily, he was the poorest starter on the field that day.

You get him in the big meets when the competition is keen and he was the best starter there. That is the way he reacted. He just reacted to the quality of the competition.

MR. TOOTELL: Larry, I think you are wrong about warming up. You say that so long as you are warming up it does not make so much difference.

I think it makes a great difference. I had a man -- he was not a sprinter. He was a half miler and a miler. In one meet, they said the program had moved ahead half an hour. Well, I had him out half an hour warming up. They shifted the event back so it was on schedule. Instead of being out an hour, he was out an hour and a half. As a result, on a cold day, he ran 4:25. The next week he went out in a meet and took about half an hour or 40 minutes warming up -- he broke his neck to run 4:35.

I noticed all season when he warmed up, he could run a real tough mile, then come back and he was really warmed up after he ran a good half.

MR. SNYDER: We were talking about warm-up for sprinters here.

MR. TOOTELL: I do not think it makes any difference.

MR. SNYDER: Well, to me it does make a difference. In talking with a man at our Faculty Club the other noon, he said something about second wind. I said, "Do you know that is a term I have not heard for the last seven or eight years?" I said, "I do not know what second wind is." He said, "That is interesting." I got to thinking back -- I said, "I have been wrong here for a long time."

To me, the warm-up that we give these kids gets them so that they really have their second wind when they are starting their mile or half mile or two miles. They do not need to run half the distance before they start feeling good again. They have done everything physiologically in the warm up period that has them ready to go.

Now, I want an authority to talk on it. Billy, what about second wind?

This was a term that I heard some years ago and I did not know what it meant.

MR. HAYES: Well, a lot of people think I kill my men off in my warm-up. The only thing I am attempting to do is to have those boys adjust their bodies to the action they will go through when they run, and they feel so much better. They run their races, and they finish their races and they have felt so much better when they have had the proper warm-up to get that state of the body — that fixes the blood stream so that it can go on taking care of the body as it goes. That is the tremendously important thing. Then the boy comes out of his competition in much better shape than he does when he goes into it with an improper warm-up.

MR. SNYDER: I think we have not been slighting the warm-up even in the discussion here. We all feel the absolute importance of getting the man ready so when he does go to the mark, he is ready for the best effort.

MR. HAYES: I think we slight it in that we do not stress it enough to the boys. We are so afraid. The reason I spoke about this idea, it brought home to me strongly a fact — a boy was running the half. He did not warm up enough. I told him to go out and warm up. I did not tell him exactly what to do — to be out an hour ahead. He went on the mark and after he finished, he felt so tired. He was all shot at the end. He had an hour before the half. I made him go out and warm up for the half. Afterwards he felt he could have run another race. It was just because he had not warmed up enough the first time.

MR. STEGEMAN: It is pretty evident that a man's second race is usually best. They have learned, now, to run that second race first.

MR. TOOTELL: Does it make a difference how you warm up?

MR. SNYDER: It should start very slowly. It would be probably a seventy-five second quarter — then going through his calisthenics, swinging his legs and a lot of conversation mixed up in — talking to the boys while he stood there, swinging his arms and legs and doing his body bends and that sort of thing — just working on the straight-away, very easy striding, half-speed for four or five minutes, then gradually building that up until he had gone through 75 yards at full speed — then closing off by going in and getting his rub-down, coming back out on the track about seven minutes before he was due to go to his mark.

MR. JOHNSON: I have in mind one thing that I believe high school coaches in general might be told which would help their sprinters in high school and later in college competition.

I have the idea that there is a lack of uniformity in the method in which high school sprinters are taught to start. That is, in the matter of holding their marks for the gun. I would like to know if anybody else feels the same way? It seems to me that very few know what it is to wait in the set position for the gun.

MR. SNYDER: Well, to me it goes back to the men who are firing the pistol. Unless you get men who are going to hold two seconds, there is no use in instructing the high school boy to hold his marks because somebody is going to beat him two or three yards if he does hold his marks. The starting has been very bad, what I have seen of it. I suppose you run into a lot of it, wherever you are.

(End of discussion of Sprinting)

PRESIDENT JOHNSON: This afternoon, we are going to have, I am sure, some very interesting discussions on the pole vault and the shot put.

Now one of the things that has been making me see red all year is this

advertising that the Reynolds Tobacco Company has been getting out, telling how much better your wind will be if you smoke Camel cigarettes.

Briefly, I think if this organization is going to justify its existence, we should take some action condemning the practice of this kind of advertising and, if it is appropriate, to level some criticism at the individuals who permit their names to be used just because they can get a couple of hundred dollars. Or, as one person has said, a carton of cigarettes every year for lending his name for such a purpose.

Is there a place for such a resolution in this organization of ours or are we stepping outside our sphere when we start telling the big business men of this country how they should advertise? Is there any expression that anybody would like to give on that?

(Here followed a brief discussion which led to a suggestion that the matter be given more attention and time later in the day.)

(The appointment of a committee to nominate officers and members of the Advisory Committee for the year 1937-38 was followed by adjournment of the morning session.)

THURSDAY AFTERNOON SESSION

June 17, 1937

The meeting reconvened at 2:15 o'clock, Mr. F. P. Johnson presiding.

PRESIDENT JOHNSON: The first thing on our program this afternoon is a discussion of the pole vault. We shall also take up later the shot put. These field events are ones that interest me and a number of others here today, I know, and are probably of more importance to us than some of the running events.

There are a lot of people who think the best way to coach a sprinter is to get a good high school sprinter and try not to spoil him. I am sure, however, there were a lot of things brought out this morning that would tend to improve any sprinter's ability.

In the field events we know that you can take a fellow who has never competed in anything, put him in the discus or the high jump or shot put or any of those events in which style — proper form is the primary consideration, and make a good competitor out of him, if he has natural coordination and competitive spirit and a few of the other essentials.

For the leadership in this discussion, we are fortunate in having a gentleman who has coached a man to a world's record. The fact that this record in the pole vault has been exceeded since George Varoff's performance last year is not so very important. I am sure that Bill Hayward of Oregon can tell us all of the important points about the pole vault and those that he cannot tell us he can find out from some of you other learned gentlemen.

I will turn this part of the discussion over to Bill Hayward of Oregon.

POLE VAULT

MR. HAYWARD: We all know that pole vaulting is a mechanical event. It is more of an acrobatic event, than, I will say, of real honest jumping. A man is fortunate in having a good pole vaulter to begin with and the better the pole vaulter is, why the better he makes the coach. That is true in many events, I believe.

Now, I have had a great deal to do with different pole vaulters and I find out that much depends on their own ability. If they are endowed with what God gave them and they are natural in making those particular movements and if they go along very well, I generally try to let them alone and help them as little as I possibly can without getting away from these natural form coordinations or abilities as you may call it. If a man can do as well with his left hand as he can do with his right, or better with the left hand, why I believe in letting him use his left hand.

So there are several things that enter into the pole vault that are very necessary, and later on, I expect to learn more about pole vaulting from you gentlemen than you are going to learn from me, because I am going to ask you questions. I think that is how we will get together on this theory and become more familiar with the different variations of form.

One of the essentials of pole vaulting is; the smoothness in which you go into that "shoot" with the pole. Of course, the equipment must fit the boy. I mean, the equipment of the pole vaulter is his pole and it has to be of the stiffness and the size that he can comfortably carry, if it is to fit his timing.

Of course we all know that a pole vaulter has to have the qualifications of several different athletes. He has to be a sprinter. He has to have the suppleness of a hurdler and he has got to have the arms — the shoulders — of a

shot putter and the "stuff that it takes," for it is one of the events that takes more nerve than anything I know of because of the breaking, sometimes, of the pole. Sometimes the boy has a very serious accident and generally does not come out of it for a while. They get what we call "pole shy" like a dog is shy of a gun. Once a pole vaulter gets "pole shy" it is a pretty serious thing to get him over it. I have not found any way of doing that and I have had several boys who have broken poles on account of coming down on the backs of their necks on the swing up.

In leaving the ground — we will not go into the take-off, because everyone knows how to get that take-off in there and the necessity of smoothness in planting the pole and the action of the arms in going into the "shoot".

Of course we all know that the taller the pole vaulter is, everything being equal with the shorter man, why the taller man has the ace in the hole. There are some who swing up to get the altitude. I believe they all swing up — some do buckle in the middle of the swing. What I mean by buckling is bringing up the knees. I believe there are just certain movements that the pole vaulter has to do to get to the top of the bar and the higher that bar, the more time he has to those movements. Naturally, there must be delay some place and the delay, I find, comes after leaving the ground — what we call the "hang". I see boys go up there from the "hang" with both feet up, and some go up with a scissors action.

When I get a boy who does either one of those things and does it correctly according to his style, I let that alone because I find if you change a boy's form, if he is doing good work, why you are going to spoil the boy.

Now, the matter of timing the boys, from what we call the "hang", as the pole goes up. You all know that there is a certain amount of time after you get up there before that pole comes up to the cross bar. By the time the pole gets to the cross bar and you want to do the shoot (of the feet), we will say you have probably got about five feet from the pole to the cross bar that you have got to make your move in. Well, at a high height, I find that the boy, by getting a full swing, loses a little bit of that pull, so I start the boy off with that swing and then come up with the knees instead of continuing the full swing.

MR. HILL: In that way you keep him from bringing in the pole too fast and killing some of his momentum?

MR. HAYWARD: Yes. Now I do not know if that is correct with all vaulters, but I found out it works better with ours. Now if there is anything there that is not just according to the ideas of you gentlemen I would like to hear about it.

MR. JONES: You speak of planting the pole. I think that is the key to good vaulting — the timing of the planting of the pole.

MR. HAYWARD: Well, he puts his foot down, he plants his foot right directly under his hand and makes his pendulum swing. If he steps in too far his swing is too straight up. If his take-off is too far back he is running the swing into the ground, so the easiest way is to plant the take-off foot just under the upper hand.

Of course, there is a tendency on the part of the boys who take this long giant swing, to pull at the same time or a little too soon. I find that the secret in pole vaulting is to let the body get up as far as you can in momentum before starting the pull-up and the bringing up of the knees.

MR. OAKES: How far are the hands apart at the take-off.

MR. HAYWARD: Well, his hands are right together. Now, not everyone can do that. Some of them leave three or four inches between the hands.

MR. HILL: I find, Bill, sometimes when the hands are close together,

one hand will interfere with the other. I have them about five or six inches apart.

MR. JONES: I think some men will slip that lower hand down a little bit to widen the base for the push-off very cleverly and to good advantage.

MR. HAYWARD: I would say, close hands, so you can get an even pull.

MR. HILL: I really think you get an evener pull with your hands about five or six inches apart.

MR. HAYWARD: I think to get more height from the pole, both hands should be together there, for your final shove.

MR. HILL: If you see pictures, they nearly all let go of the lower hand first anyway.

MR. KELLY: What other events can you work a pole vaulter in?

MR. HAYWARD: I had one jumper -- a broad jumper. Probably some of you men knew him -- Ralph Spearow (Oregon - '24). The reason why I put him in this other event was because he was such a nervous fellow. I thought putting him in some other event would sort of balance up his nervous system. He did not think so much of the pole vault. He became a pretty good broad jumper off the right foot. I did not want him to do all his jumping off the same foot. In his high jumping, he could do about 6'-1. It really did relieve the nervous tension in the pole vault.

MR. JONES: Do you not feel that broad jumping should be a definite part of a vaulter's training -- a lift off the board? I do not mean putting pole vaulters through actual broad jumping -- part of the training should be getting off the board.

MR. HAYWARD: Yes, getting off the board, and I sometimes put a pole vaulter hurdling just for the sake of getting that take-off, instead of putting him through a pole vaulting practice. I believe after a pole vaulter gets so he can do a reasonable height he does not need a great deal of work.

MR. JONES: How far is the take off from the pit?

MR. MERRIAM: A line from his upper hand running perpendicular to the ground just about where his sole is.

MR. HAYWARD: Yes, just about like that.

MR. MERRIAM: Keith Brown (Yale) worked out at our field -- this Keith Brown, the record holder, worked out at our field a year ago this last winter and he was very strong for taking off definitely back of the perpendicular from his hand and, although he worked out there only about five or six times, no matter how high he vaulted his foot would always be back. He would get his elevation perhaps two feet back of the edge of the pit. In other words, no matter how high, he would never go up too abruptly and die there. He would keep on carrying over into the center of the pit.

MR. HAYWARD: Of course, you cannot work two men just exactly with the same equal results. They have their own natural ability and, as I said, I do not like to go away very far from the man's natural ability and spoil that part of it to correct anything that I only think would improve him. Sometimes you can give a man too much form and you find he has lost his natural ability.

MR. KELLY: How much vaulting do you let a fellow like Varoff do?

MR. HAYWARD: Not a great deal. During his competitive season, he will probably jump maybe twice a week -- about two days a week, probably about Tuesday and Wednesday. Thursday he will do a little sprinting and an awful lot of bar work -- parallel bars and the rings. We have a vaulting pole suspended in the air -- the same thing, you know. The reason why they have a vaulting pole -- if he took hold of that pole, he would know he had a vaulting pole instead of a

rope. He would spring in and shoot his feet up. That is all the work he will do. Press the pole and drop down. So far as real jumping is concerned he will jump about twice a week. He would not jump very high or very often. So long as he feels that he is swinging and his timing and his coordination are right, why that is all.

I pay a lot of attention to his condition because you all know a pole vaulter should be in awful good condition to last out the afternoon.

A VOICE: I am very much interested in that problem of a boy getting to twist during his vault. I can see how he would do that if his hands were to one side or his foot was not in line — the line of the plane of his run. I have had a terrible time with some boys that way. Sometimes they would come out of it and vault beautifully and other times they would get to spinning. I could not tell why.

MR. HAYWARD: You mean when the boy is going up the pole and it swings over a little bit?

A VOICE: Not necessarily. Sometimes it does, but sometimes his body turns even if the pole stays nearly straight.

MR. HILL: It sounds to me like it is an unequal pull with one arm or the other. If you pull too hard with the lower and not hard enough with the upper it would be a tendency for a man to go off.

MR. SNYDER: Might it be in the placement of the take-off foot? We know if a man gets off to the right, he is going to swing into the bar. If he is off to the left, it is going to have this other effect.

MR. HAYWARD: If he goes too far to the left, he has a tendency to go around the pole.

MR. SNYDER: Sometimes when you tell a man to stay to the left and you watch him, he still tends to go to the right a little, and to rotate a little. We will see a lot of 13' and 13'6 vaulters doing that here.

MR. JOHNSON: Well, Bill, I am convinced that some of the reason for that spinning around the pole is due to a faulty take-off — at least so far as I am concerned, you understand. As Larry says, in the case of a right-handed vaulter the take-off is too far over to the right.

MR. SNYDER: The right or the left.

MR. JOHNSON: I got one vaulter away from that spinning or turning around the pole by laying a couple of vaulting poles at a slight angle across the runway, making him run farther over to the left so that his take-off (with the left foot) was about even with the left-hand corner of the vaulting box and back the proper distance. This enabled him to correct that fault, whether or not it will work in every case.

MR. MERRIAM: I can understand easily why that would make a man spin. If a man's foot and hands are in the right position, I cannot see why he would spin.

MR. HAMILTON: I think that may be indicated here two or three reasons for a man spinning, even if his foot is in the right place.

One of them is the unequal stress of the hands. The other is pulling too quick, and we have successfully corrected some of the boys in that regard and corrected other faults that show up simply by doing this: you might work it out on the blackboard. Draw a line down the center of the runway and if the boy is planting his foot off to the left, as many of them do, make him run on the left side of that line. If he is not planting his pole straight causing an unequal press, work on a plan straight in.

If he is pulling too quick and then shooting his left foot off at an angle put the bar at ten feet or some such height. Move it back about four feet

into the pit and make him delay his pole until he clears that bar. If he does that, he cannot possibly clear the bar if he shoots his feet off to the left.

MR. TOOTELL: I think there is one other thing which would cause the swinging to the side that perhaps you would not notice. It is possible to have your take-off foot in absolutely the correct spot. If you start your run from the incorrect spot, it brings you out in that circular swing just the same. Your left foot might end up where it should end, but you still are coming with a side momentum.

MR. MERRIAM: I have checked my boy from every angle time and time again. I cannot see any fault there. I can understand how an unequal pull would spin him but I cannot understand it if his hands and center of his body and foot are all in that same plane of run.

MR. JONES: I think the cause — the first thing I would look for — is what did he do with his loose leg, his kicking leg? Is he lifting straight?

MR. BRESNAHAN: In case the run is correct and the take-off is correct, both for distance longitudinally and laterally, many times the execution of the left leg scissors kick, if it is delayed too long tends to help complete the turn.

MR. JONES: When do you start your planting? That is, from the carry, when do you start your plant (of the pole)?

MR. HAYWARD: Just about the time he starts the take-off. His hand slips up and the pole hits the box all at once, all together.

MR. HILL: The shock of the plant helps you shift your hands.

MR. JONES: Yes. I am now more in favor of the underhand plant than I am the overhand. There are three ways of planting I think. We all have coached the overhead plant, I think. The other is the hit or miss way which spoils or discourages most followers. The principle of the underhand is hitting on a dead line. That is in my mind, better and easier accomplished if you can teach the young hand.

MR. SNYDER: What would you call that kind of a plant?

MR. JONES: The underhand plant. The overhand and the underhand are on a dead line. This thing, the side arm plant, spoils vaulting.

The reason I like the underhand is, I think, that it gives a more natural position, swinging from the carry straight into the box.

MR. MERRIAM: I also think you are able to sustain more momentum of the pole as you come to that position, while with an overhand plant, you cannot. The pole comes to a dead stop and makes more of a jerk.

MR. JOHNSON: Bill, I saw in a paper, several days ago, a statement that the swing in the pole vault had done more to spoil the chances of coming vaulters than anything else, or words to that effect. Now it has always been my opinion that my vaulters have done more with the swing than with any other particular thing in the pole vault. That is, after the take-off if they get a good pendulum swing toward the bar, which may be developed by placing the standards as far back as twenty to twenty-four inches from the lower end of the box. The swing could be developed that way, and I have depended on the swing to get my boys up there. Now if there is something new that is getting the good vaulters away from that swing, I want to know about it.

MR. HAYWARD: Well, the reason why I started to get away from the swing was this. I had a boy about six feet four. He carried that swing so far that he would have to put the standards back in order to get his feet up. That is one reason why I got the idea of bringing up the knees sooner. I get the momentum started, then buckle the knees, then go straight up.

MR. JONES: Do you work your freshmen or your beginners on pulling the take-off back, in order to increase the pendulum swing? I work with the take-off

ten feet back and I know that Hoff (Norway) took off eleven feet away from the planting box. I think it is very helpful to pull the take-off back because that increases your pendulum swing and works with the moving of the cross bar in the pit. I find that moving the take-off back is distinctly helpful in the swing.

MR. MERRIAM: Gilbert (Yale) says that that is the most important thing in pole vaulting.

MR. JOHNSON: The swing?

MR. MERRIAM: No, the distance back of the take-off.

MR. HILL: The farther back he can take off, the better off the vaulter is.

MR. TOOTELL: Where would you place the take-off foot in relation to the top of your upper hand?

MR. JONES: I place it a little forward — six inches further — about.

MR. HILL: When a man stands erect and takes hold of the pole, it is a foot out ahead of his take-off if he stands erect. His top hand probably is nine inches out ahead of his toe.

MR. BRESNAHAN: I do not believe we are so far off what Gilbert has taught his men if I understand the way he has taught. The physicists tell us, and Gilbert must be somewhat of a physicist himself, that the best swing is obtained when the take-off is directly under the hand. What really happens is this; a good many times as the vaulter comes into the take-off, the body is pulled or bowed forward. That being the case, then I think our form is not so very different from what we have discussed, or so different from what Gilbert advocates.

MR. TOOTELL: From watching the Yale boys and the pictures of them, which I have taken and looked at, they use the underhand plant. All right, they carry a pole in the usual way. The back hand is, as you say, just to hold the pole down, really just grabbing with the thumb and fore-finger. The hand is more or less free. You are swinging your pole; you really start your plant three strides before your take-off. That is natural. Your pole is coming forward to the plant with the right leg in the second last step; you are hitting flat-footed on the right foot and the right hand is driven forward.

It has to be free in there with just the thumb and finger in order to do that. Your hand slip occurs there. Incidentally, it is very necessary to keep the right elbow very close to the side because if you do not, you try to get away from the pole and you slap the take-off foot over to the right, whereas if you keep it in close and shoot the pole ahead of you, you can plant right square underneath it. Then a line straight down from the top hand will come to the front of the take-off foot.

MR. BRESNAHAN: Bill, will you discuss the value of the breaking at the knee bending the knees immediately after the take-off rather than the breaking at the hips?

MR. HAYWARD: Well, it gets the feet up just a little bit faster, that is all. It is just a matter of bringing the knees up to a position to shoot the feet up.

MR. BRESNAHAN: Do you have the feet extended before —

MR. HAYWARD: (Interrupting) As the vaulter shoots the feet, he starts to pull, and then the press.

MR. TOOTELL: The coach at Yale tells them to start to pull when they see the knees. You see, that is the Gilbert style. He tells them to wait until they see the knees.

MR. HAMILTON: It is simplicity all champions seem to have. The thing that the Southern California boys have improved most in, I should say, over last

year, is in the ability to transfer their forward momentum into an upward and forward momentum without any jerk whatever. When they plant that pole, they just plant it and zoom right up. They do it by getting their hands higher; they carry their momentum. When they get up, their feet have reached their highest point. They have plenty of momentum to shoot way out into the pit. At 14'11, Sefton vaulted and landed almost out of the pit on the other side.

MR. HAYWARD: Do you not think they are using more jack-knifes this year than they did last year?

MR. HAMILTON: They have gone through a series of exercises, building themselves up. They are stronger; have more of a shoot than they had last year. That is the result, I think, not of a change in form but just of a perfection of themselves.

MR. JONES: They have more speed.

MR. HAMILTON: They have much more speed in the pendulum of their swing. That is due to the increased efficiency that they have got, that smoothness of getting off the ground, just like their broad jumpers. Strangely enough — Meadown, occasionally on 14'4 and 14'6 has shown that same fault of paralleling the bar. He did it in the Olympic games — his winning vault.

MR. HAYWARD: I think that we had better bring the discussion to a close.

MR. SIMPSON: Can I ask one more question on the pole vault? When they first broke the 14'6½ record, I saw a picture which showed what I would call a perfect jack-knife.

MR. HAMILTON: Yes.

MR. SIMPSON: Well now, is Sefton using that perfect jack-knife all the time on those great vaults of his?

MR. HAMILTON: He whips his feet down on the other side.

MR. SIMPSON: What I am driving at; first Hoff came along, and showed the fly-away without the jack-knife. Now it is coming back. It shows what I believe you are going to have to do if you are going to get height.

PRESIDENT JOHNSON: Thank you very much, Bill, for your explanation of the intricacies of the pole vault.

MR. HAYWARD: I thank you for the information that I have got out of it.

(End of discussion of Pole Vault)

PRESIDENT JOHNSON: A couple of years ago we had a portion of our program devoted to all the aspects of training but did not touch upon the matter of smoking. Suppose we take some time right now for that. As a man who has investigated the harmful effects of smoking and some of the other aspects of smoking, will you, George Bresnahan, lead a discussion of which my point of view is shared, I hope, by a number of you. I should like it if it might lead to a resolution by this group, recommending to the general council of the N.C.A.A., that an effort be made to get the Reynolds Tobacco Company to quit advertising that Camels are going to make athletes out of them, or words to that effect.

I, personally, am very much opposed to the proposition that they seem to be promoting, that you can be a good athlete and smoke, especially if you smoke Camels. I am pretty narrow about it, I will admit. I might also say that I do not like to have anybody on my squad who is known as a smoker. I would like to hear what other people think about smoking by members of a track team.

I hope that I have something to learn because I could have a lot more men out for track if I thought it was all right for them to smoke.

Will you tell us what you know, George Bresnahan, and lead a discussion

on this aspect of training?

MR. BRESNAHAN: Pitch, I have not made any particular studies and I have not been associated with any medical association or medical men or any physiologists who have. But it occurred to me that if we were to -- if this is just a matter of opinion, the opinion of any tobacco company or tobacco manufacturer is just as good as the opinion of any coach, and that what I did try to say was, that if we attempted to present the case of non-smoking, with the idea of better physical condition -- it occurred to me that we should be armed with some rather definite information.

I think Jim Kelly mentioned this morning that, while he himself had never been a smoker, there have been tests made by medical men that claim there are no harmful effects from smoking.

We have taken that for granted possibly, at the University of Iowa, and, barring discussions, we just tried to say that it just is not being done. I have nothing definite to contribute here except tossing out the suggestion -- the old political saying -- that you can't beat somebody with nothing. So, if we are going to beat somebody, let's have something to beat them with.

PRESIDENT JOHNSON: Jim, we have entered into this discussion of smoking again and George has just stated that if we are going to try to present a case for the athlete against advertising that claims that smoking does not hurt the wind, we ought to have some definite proof.

You started to say something, this morning, about the effects of smoking on the athlete's progress and capabilities. Would you care to add anything to that?

MR. KELLY: Well, the only intentions that I had was that it would look foolish unless you had some definite proof.

Now, I have noticed on football and basketball players particularly, some that I have known have smoked, that it has not had much effect on the boy -- not nearly as much as the boy who does not smoke and eats irregularly.

Another thing, while you are talking about smoking. I have noticed an awful lot of coaches around -- they stand around and smoke and blow the smoke in the boys faces even when they are on the field practicing. If they hear about that boy smoking once in a while, they kick him off their team.

Of course, they are interested in a problem of advertising, but this example that you set is probably worse than that advertising. I do not mean any particular person or anything, but you will notice that an awful lot. These coaches cannot wait, a lot of them, until they get away from the athlete. I have seen a lot of football coaches get over to the side and get ahold of a cigarette or something like that. There are a lot more ways for you to educate these youngsters against smoking. I do not believe anybody takes a lot of that -- just like all this other false advertising that you see -- these soap ads and everything else. But, it would just make you look foolish, unless you have something definite.

They have made tests where the doctors say it does not make any effect on them -- some say it does.

MR. MERRIAM: I do not agree with Mr. Kelly that a lot of people do not pay any attention to these ads. People who are well informed, of course, do not listen to them, but after Ellinwood's name appeared in an advertisement, I got letters from as far east as New Jersey from mothers of high school boys, wanting to know if we advocated smoking as part of our training in Chicago.

PRESIDENT JOHNSON: I have the same opinion as Ned Merriam has; that smoking has a decidedly injurious effect on an athlete -- at least on his mental attitude if not on his physical condition. Maybe smoking does not have anything

more to do with this question of training than coffee drinking or Coca Cola drinking, but I feel that if a man has the idea that smoking is going to do him no good and is liable to do him harm, and for that reason gives it up, he is going to make other sacrifices that will make a better athlete out of him.

Admitting that I have not any definite scientific grounds for condemning smoking, I would like to know how many of you gentlemen here have the feeling that smoking is definitely injurious to the condition of track athletes? Raise your hands.

Well, I would say at least half.

How many feel that there are no injurious effects, just as an opinion, not a certainty, but that you just feel that they might as well smoke as not? How many have that feeling?

A VOICE: Physical effects, you mean? Not including the mental?

PRESIDENT JOHNSON: I am not including the mental or the psychological effect on the boy.

How many feel that it has no injurious effect on them physically? (One hand raised)

PRESIDENT JOHNSON: One -- there is one that does not. Well, I think that a person ought to express his opinion.

My point in bringing that matter up is that I have had -- not many parents, but a number of high school boys write me or ask if I felt that it is all right for them to smoke, they having read the Camel ads, that we have seen claiming that Camels never hurt the wind, sometimes attributed to Ellinwood and Hardin and who else?

MR. JONES: Jim Bush, also Johnny Follows from Wisconsin.

PRESIDENT JOHNSON: Is there anyone else who thinks that there is any place for a criticism in this group, as a whole?

MR. KELLY: Pitch, you can base your criticism on that, without making a definite statement or commitment that anybody gets any kick back on. It certainly is not a good thing for the morale of any squad -- everybody is agreed on that without getting into any technical argument. However, you are not going to get in any.

PRESIDENT JOHNSON: If we did adopt a resolution or anything like that, we would not definitely mention the R. J. Reynolds Tobacco Company. I do not believe that would be wise.

MR. KELLY: There is no use adopting a resolution unless you get publicity on it -- it would not do any good.

PRESIDENT JOHNSON: I would like to see some kind of a resolution brought up for use in this case -- in case anyone wants to refer to it, in the event of a question by somebody who wants to have an opinion of people who are supposed to know.

MR. HAMILTON: I move the chairman appoint a man or a committee to draw up a resolution to discuss the passage of such a motion.

MR. JONES: I second the motion.

PRESIDENT JOHNSON: Do you care for any further discussion on this proposition?

MR. STAGG: Mr. Chairman, if I may say a word or two, I would be glad to do so. I have not carried on any researches along this line at all. However, I have been interested a bit in talking with Dr. McCurdy, who has done considerable research work.

Dr. McCurdy -- and this has been substantiated by others, because I have talked with physicians who admit that the pulse rate is increased ten or more beats per minute, according to the degree of the man's use of tobacco. That,

of course, has some influence on the efficiency of an athlete, on endurance.

We well know that the men who have -- who are our greatest endurance men have very low pulse rates. I know, in several men that I have trained, that their pulse rates were very low -- I mean men who have been champions. So increasing the pulse rate would tend to reduce their efficiency.

Secondly, Dr. McCurdy tells me that a certain physiologist who made a study of this found that the red blood corpuscles that carry the oxygen in the blood were reduced, through smoking, eleven percent to twenty-two percent in the case of excessive smoking. That in itself would tend to reduce the efficiency of man -- the competitor.

Well, I simply take his word for it because he has been engaged in researches of various kinds and he has followed this subject particularly.

He cited some cases to me of men that he knew were bad cases. Then they quit smoking under the doctor's orders and their pulse rate came down considerably and they greatly improved in health.

From my own personal standpoint, I have cut them (athletes) off regularly, all through my years of coaching. I did not care who they were. If I knew of an infraction, why off he went and I have lost championships -- one that I remember very well -- as the result of it. But I never regretted it at all and in football I still continue to do it.

The first year I was over at the College of the Pacific I threw two men off and the next year I threw four men off for breaking the rule and the last two years I have not had any more trouble.

I look at it in this way. If track athletics or any athletics are good for you, why they are good partly because of the sacrifices they make necessary, and also I think if we can get that sort of morale into the boys, we are doing the boys the utmost good.

PRESIDENT JOHNSON: That matter of self discipline is as important a thing as they learn in athletics.

MR. STAGG: Yes.

PRESIDENT JOHNSON: I think we all share that idea, Mr. Stagg.

Well, we probably will not know for several years anyway just how much smoking impairs the efficiency of a human machine.

MR. JONES: The thing that we are getting at -- the thing that I ask -- is that we not have athletics used to advertise. We know that Rockne would not permit his name to be used to advertise Camels. We know that Lindbergh would not permit his name to be used. We know that Glenn Morris has been offered a proposition and turned it down.

Every boy has his idol and it is misleading and it is a misstatement of fact. That is why I would like to see a resolution covered in a very strong way.

PRESIDENT JOHNSON: As a matter of interest, in addition to the effect that it has on endurance and on the coordination in this way, if a man is dependent upon tobacco, we will say in any form for relaxation or for a quieting of his nerves and he cannot have his tobacco when he is under stress on a field and he is a little upset, his coordination is sure to be affected in the performance that he is about to attempt. Smoking not only is tough on the endurance; that is, it not only affects our middle and long distance runners, but it also has an effect on the men who require little if any endurance in their performances on the field; the weight events and the jumps.

I think we have had enough discussion about this.

On this committee to frame a resolution, I think I should like to have Frank Hill chairman, and for assistants, Fred Tootell, Tom Jones, and Bob Simpson.

If you need any further help, please call on some of these other gentlemen.

MR. HILL: It will be taken care of.

PRESIDENT JOHNSON: Now we want to have the shot put which should not take a great deal of time, although we would like to go through it as thoroughly as possible.

After the shot put we will have a short business meeting which usually takes place here. That will conclude today's activities. If you will give a little attention now to the next event that we want to discuss, we have one of the best qualified weight men in the country to lead our discussion on the shot put this afternoon.

When he was a member of the 1924 Olympic team, he was the Olympic champion in the hammer throw, and Fred Tootell also is well qualified to give us some dope about the shot put. He can also call on any other men here to assist him if he wishes. Mr. Fred Tootell of Rhode Island State.

## THE SHOT PUT

MR. TOOTELL: First, we will start with the position of the shot in the hand at the back of the circle. Now, I am going to tell you what I think. Then I am going to draw Brutus Hamilton and Glenn Hartranft into it here, and make them work.

In the first place, I believe the shot should be carried as high in the hand as the strength of the wrist will allow. Some boys carry it away up and get a better finger flip and wrist flip on it. That means that the weight is centered at the base of the middle finger. The actual center of the shot itself, is up in the fingers.

Some advocate the shot as resting against the neck and some of them advocate it pulled away a little bit. I think, when you go across, that you will get a little more drive, if it is a little further back on the shoulder.

Brutus, how do you advocate holding a shot in the hand? That is, your fingers are slightly spread and the thumb -- do you carry the thumb in front of the shot or on the side? I do not have a shot here, but this little finger is tucked under the shot. (indicating)

MR. HAMILTON: You tuck it under?

MR. TOOTELL: Not in all cases. It depends on the size of the man's little finger -- mine is very small. If it is small, it is better as a guide.

MR. HAMILTON: Do you have the shot close to the neck or away from the neck?

MR. TOOTELL: Away from the neck, clear out on the tip of the shoulder.

MR. SCHLADEMAN: If a man's hand is extremely small, then I have placed the shot on all four fingers -- the thumb in front.

MR. TOOTELL: How high on the fingers?

MR. SCHLADEMAN: As high as you can get, still not breaking the finger.

MR. TOOTELL: How about you, Glenn?

MR. HARTRANFT: The first time I went east, I believe the question came up at that time, because most of the eastern shot putters were using an iron shot and they were using four fingers.

Out here in the west, we had used the brass shot and I used three fingers, and I used the little finger and the thumb on the side. I think it depends a good deal on the shot, of course. Most of the fellows are using the brass or lead shots now.

There is some question about carrying it clear up on the hand though. I know that it can be developed, and, as you go across to that last kick, it gets

a roll on the fingers and I know that can be done all right, but generally speaking, as far up on the fingers as they can stand.

MR. MERRIAM: Do you have any difficulty in controlling the shot if you use all four fingers back of the shot?

MR. TOOTELL: If you have them spread a little bit you do not have any trouble. If you put them together there is a little more chance of it slipping off.

MR. SCHLADEMAN: I think it is the changing of the size of the shot and the man's hand. I had the case of a man who was a pretty fair shot putter. He had his hand hurt in an automobile accident. His fingers were not strong. We used the biggest iron shot we could get for him, otherwise the fingers would not work.

If a man is strong and he can roll any shot, the smaller the better. If his fingers are weak, get a big shot and you get more efficiency.

MR. TOOTELL: I think the next thing is the position of the putting elbow in the back of the circle. Now, I advocate it out and slightly down — not away up here (at right angles to the body).

MR. HAMILTON: Pointing at an imaginary spot about fifteen feet behind, with your right elbow.

MR. TOOTELL: Now, as to the position of the left arm. I believe the left arm should be up somewhat higher than the shoulder and slightly bent — that is, relaxed — fairly high. Not away up, but fairly high.

MR. JOHNSON: Above the horizontal. You have your hand held above the horizontal.

MR. HARTRANFT: Why bent?

MR. TOOTELL: You can relax with it a little bit better. If you have it straight, you tighten the muscles a little more. Secondly, from a bent position, you can use the arm a little more effectively than you can if it is straight, or if bent too much.

Now, we will take the preliminary motions in the back of the circle, such as the distribution of weight in the position at the back of the circle. Now I believe (and here we may disagree) that as you start, before you go through the preliminary motions, you are standing on your right foot flat-footed, with the muscles entirely relaxed. The left leg is relaxed and is usually bent.

MR. HAMILTON: I agree,and, incidentally, I think the coach can almost tell a good shot putter just from the way he takes that position in the back of the circle. The boy who is not at ease there will be the one who will not get distance. He will be fidgety with his left foot and will be trying to get a position. The boy who is well coached, who knows what it is about, will stand up there in a relaxed position. You can almost tell right from the very start, even when he picks up the shot and takes his position, whether or not he is a good shot putter.

MR. TOOTELL: Now on the left leg, I believe the important thing is to keep your relaxation. Try to get the leg as much as possible in the direction in which you are going to go across the circle.

MR. SCHLADEMAN: When you have a very big, powerful fellow, I have found he sometimes seems to ignore that left leg. Let him do what he wants with it out in front. I object to that rotary motion which some putters start out with.

Here on the coast a couple of years ago, one of the champions used that thing. I had two or three boys the next year who insisted on rotating the left leg. They ruined themselves in the shot put. Maybe I do not know how to coach but I do not like it.

MR. HARTRANFT: Well, I agree with that perfectly. Now there are types of boys with whom you have difficulty, in getting enough speed across the ring. Some do better with a hard forward kick and others rely on a fast backward kick in preparation for the forward action. I like the backward kick emphasized.

MR. TOOTELL: You kick the left leg backwards instead of accentuating the kick forward.

MR. SCHLADEMAN: As he does that, he is going to come up on the ball of the foot.

MR. HARTRANFT: Swinging the left leg completely relaxed, when you start across the ring, you are going to fall off the right foot. You drive with the right foot as you get your kick back. This forward action simply is a follow through to keep yourself from falling down. Your power and force are on the backward (left) which shoots you across the ring. It develops a good deal more speed than the other method.

MR. MERRIAM: How is your weight distributed after you land?

MR. HARTRANFT: Exactly the same.

MR. TOOTELL: The instant that right leg is ready to leave the ground, it should be perfectly straight, way up on it, and this shoulder (right) should be back and low. The left leg at that time is going forward and is bent. The instant before the right foot leaves the ground, the leg is perfectly straight. You are way up on the toe and the right shoulder is back. You are driving across.

MR. HAMILTON: The left hip is forward. You are off balance. I mean you should be off balance. You should be driving across.

MR. TOOTELL: On the hop, of course, the right foot stays in a straight line and the hop should be close to the ground so the spikes are more or less dragging across. Not enough to slow you up but not going up into the air either.

MR. HAMILTON: Occasionally, I think you have boys that you have to get up in the air just a little in order to get them to land in the right position; in a throwing position. It varies some with the physique and action of the type of boy.

MR. TOOTELL: The only thing I find is if they go up in the air they slow down the speed across.

MR. HAMILTON: I think it is possible to have too much speed. The main thing is to land in the proper throwing position so you can release the power into the shot. It is possible to have too much speed to time or to control that.

MR. TOOTELL: Well, I am sorry I can't agree. What I try to coach, is the greatest speed you can get with relaxation. You do not agree with me. I think you should use all the speed you can get without straining; that is, without tightening up. Now, I may be wrong because I get it from the hammer throw. It is the same thing as your pole vaulters do, your broad jumpers do, and everything. If you try to get all the speed out of them that you can, as soon as they tighten up, they slow down.

In the shot put, I think the same thing is true. It is a speed that you can get relaxed that is going to give you the coordination. You cannot get the coordination if you tighten up any place, isn't that true?

Another thing, I think unless you try to get speed — that is, if you are content to go through more or less loafing, so to speak, as some of them do — you will never build up your coordination faster to use the speed. What do you think about that, Carl?

MR. SCHLADEMAN: I think that is true. That brings out coaching methods. The more speed you can get across the ring without tightening up at the

front end -- the emphasis is on the speed at the finish.

MR. JOHNSON: Is the speed across the circle going to give you speed in your put?

MR. SCHLADEMAN: Only relatively to a certain degree. If he sets too much speed at the back end, he does not land in a proper position at the front end.

MR. JOHNSON: I have found that likely to occur.

MR. TOOTELL: I find the way most of those boys develop the ability to coordinate on speed is to try to do it. They may be slow and miss it for a while, but will finally click.

Now the length of your hop, I think, depends on the height of the individual. It varies. Some hop approximately three feet with the right foot and some a little bit more and some possibly a little bit less.

MR. HARTRANFT: I put my man in the position against the board where he is going to drive from and then, where his foot is, that is where he is supposed to hop to.

MR. TOOTELL: The only trouble you might have with that is where you may be driving from that, that foot will be all right when you are stationary. When you get speed, you require a little more room.

MR. HARTRANFT: That will work itself out. That is what I determine for the boy when he is first working out. I do not know about the other events. Of course, I have been coaching them, but in the shot put -- it has been more my specialty. I think we are too prone to set a certain type of thing and have the boy do it.

Now, I know in my own experience that it was just a continual change. I went across with one kind of hop for two or three weeks and I would develop a fault and my coach would change the whole works, trying to rectify that mistake. Gradually I might come back to the original work and then I would go to the bad and then we would try something else. You cannot have any particular form, permanently.

MR. TOOTELL: Now we will take the position from which you land from the hop. When your right foot hits in the circle from the hop, what position are you in?

I think that you should be with the right leg bent, your shoulders still back, your arm in the same position. The left leg is out in front. It should be practically straight. Usually you will find it to the left of the direction of the put. I think it should be. As you hit, you are settling down -- you are letting that right leg buckle; your forward momentum is still under way.

The instant that left foot hits, you start up with that hip, leg, and back drive. In other words, everything is starting, so that in the instant that left foot hits you have started your put coming up.

The trouble, I have found, with most of my shot putters, when they get there they want to get down and try and stop and murder it. When you do that, you slow up and do not get your velocity.

MR. JOHNSON: There is a variance there among putters. I think that you will find some fellows who are particularly agile can make the landing with their feet touching the ground at about the same time.

A man like Hugh Rhea, however, who put for Nebraska a few years ago, landed on his right foot and about a fifth of a second later, or longer than that, he put his left foot down. In other words, he landed on his right foot a good deal before his left foot came to the ground. His right foot landed and his left foot landed, then he went down into a bend toward the rear of the circle with his right leg bent and his back bent and the shoulder dropped. Rhea was very

slow up until after he got his left foot on the ground; that is where his speed started, if I remember correctly.

MR. TOOTELL: I think sometimes if they put too much of the emphasis on the left leg, on the hop, it throws that leg way up.

Another thing. I find when they land from the hop instead of letting the right leg continue to bend until the left one hits, that they stiffen the right one and it rocks them forward, so they are more or less erect.

MR. JOHNSON: With the weight divided, whereas it should be on only the right foot.

MR. HARTRANFT: I think you are perfectly right, although I try to get my men working towards hitting on both feet together.

MR. TOOTELL: I have found this: I have found that if you look at someone and you say that his feet are hitting together -- you think they are hitting together. If you take a motion picture of that and then look at it, you will find those feet are not hitting together.

MR. HARTRANFT: I know they do not. That is what I am trying to get them to work for.

MR. SNYDER: Did you do that yourself?

MR. HARTRANFT: I used to bank the board with my left foot -- my foot hit up in the left corner of the board and ground and I drove against the board. My foot was to the left a little. I do not think that is a fault.

MR. SCHLADEMAN: I do not think so, either.

MR. HARTRANFT: If it is so far to the left that you are beginning to turn into it, that is, tend to face in the direction of the throw, then it becomes a fault.

MR. MERRIAM: If the hips are in the line of fault, that is, turned forward, it is just as bad.

MR. HAMILTON: It is a fault when they get that left foot so far to the left that they cannot keep their left hip in line -- the hip is the important thing.

MR. SCHLADEMAN: That knee has got to be bent -- it has got to be in ahead of the foot and the hip is at least a foot ahead of the right foot.

MR. JOHNSON: At what part of the put? At the landing?

MR. SCHLADEMAN: At the landing, at the landing, yes.

MR. JOHNSON: I have never felt that the right hip would be as much as a foot ahead of the right foot.

MR. SCHLADEMAN: I may be wrong about that, but I have had a couple of awful big fellows. A foot on those fellows would probably be six or eight inches on another man, because those fellows are terribly big.

MR. HAMILTON: Sam Francis (Nebraska '37) can teach us one thing about the shot. When he gets into the throwing position, he guns it.

MR. HAYLETT: He just explodes.

MR. JOHNSON: He is in position.

MR. HAMILTON: He is careful to get into the proper throwing position. When he is there, he really explodes.

MR. SCHLADEMAN: Well, when you are in that putting position, if it is a correct position, you can put everything you have on it and keep your coordination provided the hip comes in at the right time. If it comes in wrong, then you will not get any result.

MR. TOOTELL: What would you tell a green shot putter? I mean, kids who have not put very much. A lot of them do not even use their hips.

MR. SCHLADEMAN: I would tell him he has to put the shot with both feet on the ground. He cannot jump at it. I may try to have him hold off his

reverse as long as possible, keep his feet on the ground. He has to put the shot with his feet on the ground. That will give him the late reverse you require.

MR. TOOTELL: Do you think he will actually put the shot with both feet on the ground?

MR. SCHLADEMAN: A slow movie will show that.

MR. TOOTELL: I have not yet seen a slow movie of any good shot putter which shows him with the shot actually leaving the hand, with both feet on the ground. It varies, from just off the toe to about three or four inches.

MR. HAYWARD: Do not they get a lift with the left foot then?

MR. TOOTELL: They get a drive off the left. It means that the right one is just off. I told the boys to put from both feet on the ground. Then I showed them the slow movies. They said, "Well, both of his feet are not on the ground, the right one is off." I said, "If you try to keep it on the ground, you will be like that. If you try to get it off, it will be off too much."

MR. HAMILTON: I think that is right. It is a short of a rocking motion, I suppose, and both feet play a very important part. Most shot putters neglect the left foot. Sexton, I think, has more left foot drive than any shot putter I have seen.

MR. HARTRANFT: Well, I think you are right.

I might give you a couple of suggestions in regard to green kids. I try to break this thing down into as simple movements as possible.

You have a spring in your ankle or your instep and you have a spring in your knee and you have a spring in your body, and you have a sway in your hips and you have a good kick in your shoulders and one in your elbow and one in your wrist and one in your fingers and it is synchronizing; all these together, that makes a good shot putter. I think the most important one, the one that most boys are lacking in, is the spring from in there; this motion of the body at the waist.

MR. TOOTELL: That really is the most powerful part in the body where you get the most force — at your waist; this back leg and that waist on that lift.

MR. HARTRANFT: I think it is rather important to remember that waist.

MR. TOOTELL: Now we come to the reverse.

On the reverse I feel that it is just a follow through and a device to enable you to drive a little bit harder and still stay inside the circle. Now maybe I am wrong. How about it?

MR. SCHLADEMAN: I think you are right. I think the reverse does not put the shot at all. It keeps you from fouling.

MR. TOOTELL: I think it allows you to drive a little bit harder and then stay in. I think if you mis-time it, it does you more harm than it does good. That is, if you put the shot when both feet are in the air, why then it is definitely harmful. But if you get it just right, you can drive a little bit more into it and still stay inside the circle.

How about the height the shot should go? I have had a lot of trouble. When they put it low, they seem to get a lot of speed in the drive. When they put it up, they do not get it.

MR. JOHNSON: Is not that because of the inefficiency of the human mechanism?

MR. HAMILTON: It stands to reason you can throw a shot harder shoulder high. The problem of the coach is to find the degree of the greatest efficiency. It will vary with different boys. My belief is that the most efficient man is a little bit lower in general, than that which we usually coach.

MR. TOOTELL: Do you mean, as we usually coach, Brutus, or as they

usually put it?

MR. HAMILTON: I think most of us coach them to throw it too high. Naturally, if a boy is a fifty foot shot putter, he will have to get it high.

MR. JOHNSON: It will approach a 45 degree angle, will it not?

MR. RIDER: Not that much. 41 degrees is proper. They tested it out at Springfield College. 41 degrees was the best. They tried it from all angles. They figured the projectile sent out from the ground would get it's maximum distance in 45 degrees. Here the shot is leaving the hand at about seven feet in the air, which takes some off. They tested with instruments at all the different angles, with the same man, the same force back of it, and found the optimum angle to be 41 degrees.

MR. JOHNSON: That is very interesting. I never knew what it was, but I felt it approached 45 degrees.

MR. HAMILTON: We have talked about this pretty thoroughly -- we have got the most important thing, I think. That is the terrific amount of work that a shot putter has to do in order to acquire all the details of perfect form. They have to throw it and throw it and throw it. They have to work hard. They have to work over a long period of time, and, if possible, they should work fall, winter, summer, and spring. I work them an hour and a half a day. They throw it all that time and go through shadow hops. They go through all kinds of contortions and building up exercises, but they work an hour and a half a day.

MR. TOOTELL: Brutus, out of season, you work them an hour and a half a day? What do you do with them in your competitive season?

MR. HAMILTON: We work them.

MR. TOOTELL: How close up to the meet time, up to competition, do you work them?

MR. HAMILTON: Lay them off one day and work lightly the day before that.

MR. TOOTELL: What do you call lightly?

MR. HAMILTON: Oh, just forty foot throws, for form.

MR. TOOTELL: Well now, that is what I find difficult to believe. You say you do it for form. I tell my hammer throwers, "Never mind how it goes. Try and do it right. If you do that, the hammer is going to go. You cannot hold it." If you put the shot, it is going to go.

MR. HAMILTON: It is no different than the shot. You do not have to put the punch at the tail end of it.

MR. TOOTELL: You can treat it a little bit different. Even so, if you can get in the habit of easing off in practice you are apt to ease off in competition.

MR. SCHLADEMAN: Work them. Give them all the work they possibly can stand earlier in the week. Lay them off two days. I do not work them on Thursday or Friday if we have a meet on Saturday.

MR. HAMILTON: Do you have them do some exercises?

MR. SCHLADEMAN: Yes, exercises with the shot. I do not believe it is possible for a shot putter to go stale because of too much work, if of the right kind of work. I think he has to be able to stand the work or he can never throw the heavy weight.

MR. HARTRANFT: We work every day. On the last day, we work just for form, about half an hour.

MR. TOOTELL: You have them put the day before the meet?

MR. HARTRANFT: Yes, warm up and exercises.

MR. TOOTELL: Do you find that varies with the individual?

MR. SCHLADEMAN: Yes, sure. You find exceptions to all rules. I had a miler who had to run the day before he ran; run hard. Otherwise he was no good

the next day in the mile. It took me two years to find that out.

MR. HAMILTON: How often do we find fellows in a big meet, where we lay them off and protect them. They will go out and run hard the day before the finals and be all in after a hard work-out — maybe it is a quarter, maybe it is a half — and come back the next day and look better than ever. Quite often you find them that way. It is a good idea to study these boys in these two day meets and see how they perform after a hard preliminary.

MR. TOOTELL: I think you will find that a boy who is an extremely good competitor, a highly nervous type, does a little bit better with a little easier work. I mean you get a fellow who is explosive on the day of the meet. I think he does better with less work. You get the other fellow. He probably requires more work up to the day of the meet.

Another thing I would like to ask. Do any of you vary the weights of your shots in practice?

MR. HAMILTON: I have, on one boy. He had a bad wrist. That is the only time. Some years ago I worked with a twenty pound shot. I do not see that it made much difference.

MR. TOOTELL: Do you work with a lighter one at all?

MR. HAMILTON: With this boy who had a bad wrist and weak fingers.

MR. SCHLADEMAN: We have a twenty pound shot. If a man thinks it is doing him good earlier in the year, I let him work with it. I do not insist on it.

MR. TOOTELL: You do not use the lighter one at all?

MR. SCHLADEMAN: No.

MR. TOOTELL: How about you, Glenn?

MR. HARTRANFT: No.

MR. TOOTELL: Well myself, I have been experimenting a little bit this year. Well, in the running races, you give a fellow speed work to speed him up. And once in a while, at a certain season of the year, you give him endurance work, for power and strength. I have been playing around with the shot putters to a certain extent. That is, not during the meet season itself have I let them touch the big shot, but in the fall. Well, later I let them play with the big one and then, during the season, I have given them most of their work with the 12 pound shot and I have found out the speed of my shot putters is up a lot. They used a 12 and went better with a 16 on Saturday.

MR. HAMILTON: I think probably you emphasize speed more than I do, at least, Fred, in the shot put.

MR. TOOTELL: I do not think you would know it to look at them, Brutus.

MR. HAMILTON: Does it make any difference as to the size? I notice the Columbia boys using a big iron. Do they throw that in the meet?

MR. TOOTELL: Yes, I have noticed a lot of those boys back there yelling for that iron shot. They feel they can get more fingers on to it. They like to feel it rather than a small shot.

MR. HAMILTON: I think it is a matter of personal taste. Germans, I recall, all used the big shot. Leo Sexton used the big iron shot. I think it is just a matter of taste. I do not think there is any particular advantage.

MR. SCHLADEMAN: I agree with Brutus, except for one thing. I believe if a man's hand is not extremely strong, if he has long fingers and fairly big hands that are not too strong, he must use a big shot to get more surface to put those fingers against. Otherwise, I think the shots are his own choice.

MR. TOOTELL: There is one thing when I was speaking about the 12, to speed it up. You say you are trying to get the muzzle velocity up and the 12 does do that. It speeds up the arm to a certain extent, speeds up your reaction.

When you do get hold of the 16, you can go through probably a little bit faster with a little more relaxation, than you would otherwise.

One reason that it worked fairly well with me was due to the fact perhaps that this boy also had thrown the 35 pound weight, which would give him a lot of power and possibly slow him down a little bit, and had thrown a hammer which would give him power. So he needed more speed work than actual weight. It was not a case of the shot being heavy. It was that he needed the speed.

MR. SCHLADEMAN: It never occurred to me to try the lighter shot.

MR. RIDER: Is there any danger of losing your timing?

MR. TOOTELL: Mine did not. I had three boys and it helped all of them.

MR. HAMILTON: Try about a 12 pound shot. A boy can throw a 12 pound shot and have a whole multitude of flaws in his form and yet be successful but in the 16 pound shot you have to use the muscles of the body and you cannot get by without pretty good form.

That is the reason so many high school shot putters are good at the 12 but never quite as good at the 16. They cannot adjust their form to the 16 pound shot.

MR. TOOTELL: There is one thing, Brutus, that I might say about that. You are perfectly right in that. The reason I took the 12 was because if I wanted to have a shot made, I would have to have a lead one made. I would have picked probably a 14 or a 15 pound shot and with a lead one, it would have been a little bit too small. That is the reason I used the iron one, the 12.

MR. JOHNSON: I wonder if we should not close up this discussion pretty soon, Fred?

MR. TOOTELL: Yes.

(End of discussion of Shot Put)

PRESIDENT JOHNSON: I hate to stop a very interesting and intelligent discussion of the shot, but we cannot continue forever. We have a few minutes more of business to do here.

I am wondering if there are enough here to pass upon a proposition that was suggested by the Advisory Committee, and that is the matter of raising our membership fee in the Association. We do not like to do this because for one reason we have always had it at one dollar since I can remember, and that goes back to about 1930 or '29.

The reason for this, or what appears to be the necessity for our raising the membership fee for active members, is that up until this time it has always been a burden on someone to get out these notes. The mimeographing and sending of the notes amounts to something like between forty-five and fifty-five dollars annually.

The Vice President of the organization has always borne this expense — not personally, but his department has had to take care of it. If we would raise the fee to a dollar and a half I am sure we would not put this unnecessary burden on the Vice President.

I would like to have an expression of opinion from some of you gentlemen as to whether this change will be accepted by our membership, and whether the dollar and a half will be as cheerfully paid by our prospective new members as the annual one dollar fee has been.

(Here followed a brief discussion regarding the yearly membership fee. Following a motion by Mr. Oakes, second by Mr. Snyder, that the fee be raised to $1.50, the proposition was put to a vote and carried. It was understood that the fee for associate members would remain at $1.00.)

PRESIDENT JOHNSON: At the meeting this evening, Frank, I would like to have your resolution concerning cigarette advertising in order, if such a thing is possible. Your assistants are Tootell, Simpson, and Jones.

The final piece of business on today's program is the matter of the report of the Nominating Committee for the officers for next year.

The Committee is composed of Bob Fetzer, George Rider, Carl Olson, and Carl Schlademan.

Bob, will you make your report? After that we shall have the election.

MR. FETZER: Mr. President and the Track Coaches Association: The Nominating Committee wishes to submit to the Association the following recommendations for nominations.

For President: F. P. Johnson, Drake University.

For Vice President: Fred Tootell of Rhode Island.

For Secretary-Treasurer: Brutus Hamilton of California.

The carry-over members of the Advisory Committee are as follows:

Clyde Littlefield of the University of Texas and Billy Hayes of the University of Indiana, for one year.

Henry Schulte of the University of Nebraska and Carl Olson of the University of Pittsburg, for two years.

To nominate for a three year period, two new members: Frank Hill of Northwestern University and Herman J. Stegeman of the University of Georgia.

PRESIDENT JOHNSON: Well, you have heard the report of the Nominating Committee. I do not mind serving as President, but I think there are a number of men in this organization that are a good deal more capable, so far as running a meeting is concerned, than I am.

I also think that if there is supposed to be any honor connected with this job, that it ought to be passed around.

MR. HILL: Nobody else thinks so, so sit down.

PRESIDENT JOHNSON: I would like to call for additional nominations which is in line with the usual procedure, if I understand the rules of order.

MR. HILL: I move that the nominations be closed.

MR. SNYDER: I second the motion.

MR. HAMILTON: Question!

MR. HILL: There is a motion before the house. Go ahead.

PRESIDENT JOHNSON: Are there any more nominations for any of the offices? (None were offered)

Those in favor of the acceptance of the report of the Nomination Committee, please answer by the usual sign.

... The motion was put to a vote and carried ...

VOICES: Speech!

PRESIDENT JOHNSON: I shall try to see that the office of President is carried out in a better way than it has been during the past year, and I shall try to see that the office of Vice President and that of Secretary-Treasurer is carried out in like manner.

Is there any other business that ought to come before this meeting this evening?

MR. HAMILTON: I move we adjourn.

MR. STEGEMAN: I second the motion.

... The motion was put to a vote and carried, and the meeting adjourned at 5:30 o'clock ...